**Objective 2:** To prepare students to be effective researchers in the field of Ecology

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| --- | --- | --- | --- |
| **Outcome** | **Data** | **Data Source** | **Frequency** |
| Students should be able to critically review the relevant literature and state a research problem in such a way that it clearly fits within the broad context of the field of Ecology as a whole, and demonstrates the value of the solution of the problem to the broad field | Rubric to be filled out at student’s preliminary exam and defense. Based on oral presentation and written document | Faculty on student's committee | After every preliminary exam and defense |
| Students should be able to critically review the relevant literature and state a research problem in such a way that it clearly fits within the context of the student’s ecological sub-discipline and demonstrates the value of the solution of the problem to that sub-discipline | Rubric to be filled out at student’s preliminary exam and defense. Based on oral presentation and written document | Faculty on student's committee | After every preliminary exam and defense |
| Students should be able to apply sound research methods/tools to problems in an area of study and describe the methods/tools effectively | Rubric to be filled out at student’s preliminary exam and defense. Based on oral presentation and written document | Faculty on student's committee | After every preliminary exam and defense |
| Students should be able to analyze/interpret research data correctly and thoroughly or, for a theoretical investigation, correctly and thoroughly analyze models. | Rubric to be filled out at student’s preliminary exam and defense. Based on oral presentation and written document | Faculty on student's committee | After every preliminary exam and defense |
| Students should be able to draw valid conclusions from data and make a convincing case for the contribution of those conclusions in advancing knowledge within the sub-discipline. | Rubric to be filled out at student’s preliminary exam and defense. Based on oral presentation and written document | Faculty on student's committee | After every preliminary exam and defense |

EVALUATION RUBRIC: PRELIMINARY EXAM

Doctoral Candidate: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Needs Meets high Truly**

 **improvement professional exceptional**

 **standards (top 10%)\***

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| --- | --- | --- | --- | --- | --- |
|  | **1** | **2** | **3** | **4** | **5** |
| •states a research problem in such a way that it clearly fits within the context of the literature in the broad field of Ecology, and addresses the value of the solution of the problem to the broad field  |  |  |  |  |  |
| •states a research problem in such a way that it clearly fits within the context of the literature in the student’s ecological sub-discipline |  |  |  |  |  |
| •demonstrates the potential value of the solution of the research problem in advancing knowledge within the sub-discipline |  |  |  |  |  |
| •provides a sound plan for applying research methods/tools to solving the research problem and shows a good understanding of how to use methods/tools effectively |  |  |  |  |  |
| •provides a sound plan for analyzing/interpreting research data or models correctly and thoroughly |  |  |  |  |  |
| •communicates the proposed research clearly and professionally in written form appropriate to the field |  |  |  |  |  |
| •communicates the proposed research clearly and professionally in oral form appropriate to the field |  |  |  |  |  |
| •demonstrates capability for independent research in the area of study, the ability to develop and apply substantial expertise in that area and to make an original contribution to it |  |  |  |  |  |

\* Relative to all other students who are now or have ever been in the Duke UPE graduate program.